WHAT IS CLAIMED IS:

1. A printing apparatus scanning a carriage mounting a printing head over a printing medium for a plurality of times, to perform printing upon respective scan and to perform feeding the printing medium for feeding the printing medium for a predetermined amount in a direction different from a scanning direction of said carriage between scans of plurality of times for printing on a printing medium, comprising:

means for getting information relating to a printing medium feeding period required for feeding the printing medium for the predetermined amount after completion of printing in a preceding line in a preceding scan;

means for setting a carriage scanning period required to printing start of the next line after completion of printing in said preceding line so as to be substantially equal to said printing medium feeding period depending upon printing completion position of the preceding line and the printing start position of the next line; and

means for driving said carriage to scan depending upon a period set by said carriage scanning period setting means.

2. A printing apparatus as claimed in claim 1, wherein said carriage scanning period includes at least a first carriage scanning period required for the carriage to

reach a predetermined position after completion of printing of the preceding line and a second carriage scanning period required for the carriage to reach the predetermined period at the printing start position of the next line,

said carriage scanning period setting means takes a difference between a said printing medium feeding period and a sum of said first carriage scanning period and said second carriage scanning period, as a waiting period when a sum of said first carriage scanning period and said second carriage scanning period is less than said printing medium feeding period,

said carriage driving means maintains stopping the carriage for said waiting period after deceleration and stop of the carriage according to said first carriage scanning period after completion of printing of the preceding line.

3. A printing apparatus as claimed in claim 1, wherein said carriage scanning period includes at least a first carriage scanning period required for the carriage to reach a predetermined position after completion of printing of the preceding line and a second carriage scanning period required for the carriage to reach the predetermined period at the printing start position of the next line,

said carriage scanning period setting means sets

scanning speed of said carriage so that a sum of said first carriage scanning period and said second carriage scanning period becomes equal to said printing medium feeding period, and

said carriage driving means drives carriage scanning depending upon scanning speed of the carriage set by said carriage scanning period setting means.

4. A printing apparatus scanning a carriage mounting a printing head over a printing medium for a plurality of times, to perform printing upon respective scan and to perform feeding of printing medium for feeding the printing medium for a predetermined amount in a direction different from a scanning direction of said carriage between scans of plurality of times for printing on the printing medium, comprising:

means for getting information relating to a printing medium feeding period required for feeding the printing medium for the predetermined amount after completion of printing in a preceding line in a preceding scan;

means for getting information relating to a carriage scanning period from end position of printing of the preceding line to start position of printing of next line in a scanning direction of the carriage; and

means for driving said carriage to scan to printing start of the next line after completion of printing in said preceding line depending upon a relationship between said

carriage scanning period and said printing medium feeding period.

5. A printing apparatus as claimed in claim 4, wherein said carriage driving means does not vary scanning speed of said carriage even after completion of printing of preceding line when said carriage scanning period is longer than said printing medium feeding period.

6. A printing apparatus as claimed in claim 4, wherein said carriage driving means provides a zone to stop the carriage for a predetermined period so that said carriage scanning period becomes equal to said printing medium feeding period when said carriage scanning period is less than said printing medium feeding period, and accelerates said carriage to reach the printing start position at a predetermined speed after decelerating said carriage to stop for the predetermined period after completion of printing of the preceding line.

7. A printing apparatus as claimed in claim 4, wherein said carriage driving means provides a zone to decelerate the carriage for a predetermined period so that said carriage scanning period becomes equal to said printing medium feeding period when said carriage scanning period is less than said printing medium feeding period, and accelerates said carriage to reach the printing start

position at a predetermined speed after scanning said carriage at decelerated speed after completion of printing of the preceding line.

8. A printing apparatus scanning a carriage mounting a printing head over a printing medium for a plurality of times, to perform printing upon respective scan in a predetermined direction, and to perform feeding the printing medium for feeding the printing medium for a predetermined amount in a direction different from a scanning direction of said carriage between scans of plurality of times in said predetermined direction for printing on the printing medium, comprising:

means for getting information relating to a printing medium feeding period required for feeding the printing medium for the predetermined amount after completion of printing in a preceding line in a preceding scan;

means for setting a carriage scanning period required to printing start of the next line after completion of printing in said preceding line in said preceding scan so as to be substantially equal to said printing medium feeding period depending upon printing completion position of the preceding line and the printing start position of the next line; and

means for driving said carriage to scan depending upon a period set by said carriage scanning period setting means.

9. A printing apparatus as claimed in claim 8, wherein said carriage scanning period includes at least a first carriage scanning period required for stopping the carriage at a predetermined position after completion of printing of the preceding line, a carriage return period required for effecting scanning in said predetermined direction and returning the carriage in reverse direction to stop at the predetermined position, and a second carriage scanning period required for the carriage to reach at the predetermined speed to the printing start position of the next line from a predetermined position stopping after carriage return,

said carriage scanning period setting means takes a difference between a sum of said first carriage scanning period and said carriage return period and said second carriage scanning period, and a printing medium feeding period as a waiting period when a sum of said first carriage scanning period and said carriage return period and said second carriage scanning period is less than said printing medium feeding period,

said carriage driving means maintains stopping the carriage for said waiting period after carriage return.

10. A printing apparatus scanning a carriage mounting a printing head over a printing medium for a plurality of times, to perform printing upon respective scan and to

perform feeding of printing medium for feeding the printing medium for a predetermined amount in a direction different from a scanning direction of said carriage between scans of plurality of times for performing printing on the printing medium, wherein a recovery process of the printing head at a predetermined position is performed per scan in a predetermined direction of said carriage, comprising:

means for getting information relating to a printing medium feeding period required for feeding the printing medium for the predetermined amount after completion of printing in a preceding line in a preceding scan;

means for setting a carriage scanning period required to printing start of the next line after completion of printing in said preceding line in a preceding scan so as to become equal to said printing medium feeding period depending upon printing completion position of the preceding line and the printing start position of the next line; and

means for driving said carriage to scan depending upon a period set by said carriage scanning period setting means.

11. A printing apparatus as claimed in claim 10, wherein said carriage scanning period includes at least a first carriage scanning period required for the carriage to stop at a predetermined position after completion of

printing in a predetermined direction, a recovery process period required for performing recovery process of the printing head at the predetermined position and a second carriage scanning period required for the carriage to reach the printing start position of the next line by scanning the carriage in a direction opposite to scanning of said predetermined direction from said predetermined position after finishing of the recovery process,

said carriage scanning period setting means takes a difference between a sum of said first carriage scanning period, a recovery period and said second carriage scanning period, and said printing medium feeding period as a waiting period when a sum of said first carriage scanning period, said recovery period and said second carriage scanning period is less than said printing medium feeding period,

said carriage driving means stops the carriage for said waiting period after finishing said recovery process.

12. A printing apparatus as claimed in claim 10, wherein

said carriage scanning period includes at least a first carriage scanning period required for the carriage to stop at a predetermined position after completion of printing in a predetermined direction, a recovery process period required for performing recovery process of the printing head at the predetermined position and a second carriage scanning period required for the carriage to

reach the printing start position of the next line by scanning the carriage in a direction opposite to scanning of said predetermined direction from said predetermined position after finishing of the recovery process,

said carriage scanning period setting means takes said printing medium a difference between a sum of said first carriage scanning period, a recovery period and said second carriage scanning period, and said printing medium feeding period as a waiting period when a sum of said first carriage scanning period, said recovery period and said second carriage scanning period is less than said printing medium feeding period,

said carriage driving means for performing said recovery process after stopping the carriage for said waiting period.

13. A carriage scan driving method using a printing apparatus scanning a carriage mounting a printing head over a printing medium for a plurality of times, to perform printing upon respective scan and to perform feeding the printing medium for feeding the printing medium for a predetermined amount in a direction different from a scanning direction of said carriage between scans of plurality of times for printing on the printing medium, comprising:

step of getting information relating to a printing medium feeding period required for feeding the printing

medium for the predetermined amount after completion of printing in a preceding line in a preceding scan;

step of setting a carriage scanning period required to printing start of the next line after completion of printing in said preceding line so as to be substantially equal to said printing medium feeding period depending upon printing completion position of the preceding line and the printing start position of the next line; and

step of driving said carriage to travel depending upon a period set by said carriage scanning period setting step.

14. A carriage scan driving method as claimed in claim 13, wherein

said carriage scanning period includes at least a first carriage scanning period required for the carriage to reach a predetermined position after completion of printing of the preceding line and a second carriage scanning period required for the carriage to reach the predetermined period at the printing start position of the next line,

said carriage scanning period setting step takes a difference between a said printing medium feeding period and a sum of said first carriage scanning period and said second carriage scanning period, as a waiting period when a sum of said first carriage scanning period and said second carriage scanning period is less than said printing medium feeding period,

said carriage driving step maintains stopping the carriage for said waiting period after deceleration and stop of the carriage according to said first carriage scanning period after completion of printing of the preceding line.

15. A carriage scan driving method as claimed in claim 13, wherein said carriage scanning period includes at least a first carriage scanning period required for the carriage to reach a predetermined position after completion of printing of the preceding line and a second carriage scanning period required for the carriage to reach the predetermined period at the printing start position of the next line,

said carriage scanning period setting step sets scanning speed of said carriage so that a sum of said first carriage scanning period and said second carriage scanning period becomes equal to said printing medium feeding period, and

said carriage driving step controls carriage scanning depending upon scanning speed of the carriage set by said carriage scanning period setting step.

16. A carriage scan driving method using a printing apparatus scanning a carriage mounting a printing head over a printing medium for a plurality of times, to perform printing upon respective scan and to perform feeding of

printing medium for feeding the printing medium for a predetermined amount in a direction different from a scanning direction of said carriage between scans of plurality of times for printing on the printing medium, comprising:

step of getting information relating to a printing medium feeding period required for feeding the printing medium for the predetermined amount after completion of printing in a preceding line in a preceding scan;

step of getting information relating to a scanning period of the carriage from completion position of printing of the preceding line to start position of printing of next line in a scanning direction of the carriage; and

step of driving said carriage to scan to printing start of the next line after completion of printing in said preceding line depending upon a relationship between said carriage scanning period and said printing medium feeding period.

17. A carriage scan driving method as claimed in claim 16, wherein said carriage driving step does not vary scanning speed of said carriage even after completion of printing of preceding line when said carriage scanning period is longer than said printing medium feeding period.

18. A carriage scan driving method as claimed in claim

16, wherein said carriage driving step provides a zone to stop the carriage for a predetermined period so that said carriage scanning period becomes equal to said printing medium feeding period when said carriage scanning period is less than said printing medium feeding period, and accelerate said carriage to reach the printing start position at a predetermined speed after decelerating said carriage to stop for the predetermined period after completion of printing of the preceding line.

19. A carriage scan driving method as claimed in claim 16, wherein said carriage driving step provides a zone to decelerate the carriage for a predetermined period so that said carriage scanning period becomes equal to said printing medium feeding period when said carriage scanning period is less than said printing medium feeding period, and accelerate said carriage to reach the printing start position at a predetermined speed after scanning said carriage at decelerated speed after completion of printing of the preceding line.

20. A carriage scan driving method using a printing apparatus scanning a carriage mounting a printing head over a printing medium for a plurality of times, to perform printing upon respective scan in a predetermined direction, and to perform feeding of printing medium for feeding the printing medium for a predetermined amount in a direction

different from a scanning direction of said carriage between scans of plurality of times in said predetermined direction for printing on the printing medium, comprising:

step of getting information relating to a printing medium feeding period required for feeding the printing medium for the predetermined amount after completion of printing in a preceding line in a preceding scan;

step of setting a carriage scanning period required to printing start of the next line after completion of printing in said preceding line in said preceding scan so as to be substantially equal to said printing medium feeding period depending upon printing completion position of the preceding line and the printing start position of the next line; and

step of driving said carriage to scan depending upon a period set by said carriage scanning period setting step.

21. A carriage scan driving method as claimed in claim 20, wherein

said carriage scanning period includes at least a first carriage scanning period required for stopping the carriage at a predetermined position after completion of printing of the preceding line, a carriage return period required for effecting scanning in said predetermined direction and returning the carriage in reverse direction to stop at the predetermined position, and a second carriage scanning period required for the carriage to

reach at the predetermined speed to the printing start position of the next line from a predetermined position stopping after carriage return,

said carriage scanning period setting step takes a difference between a sum of said first carriage scanning period and said carriage return period and said second carriage scanning period, and a printing medium feeding period as a waiting period when a sum of said first carriage scanning period and said carriage return period and said second carriage scanning period is less than said printing medium feeding period,

said carriage driving step maintains stopping the carriage for said waiting period after carriage return.

22. A carriage scan driving method using a printing apparatus scanning a carriage mounting a printing head over a printing medium for a plurality of times, to perform printing upon respective scan and to perform feeding of printing medium for feeding the printing medium for a predetermined amount in a direction different from a scanning direction of said carriage between scans of plurality of times for printing on the printing medium, wherein a recovery process of the printing head at a predetermined position is performed per scan in a predetermined direction of said carriage, comprising:

step of getting information relating to a printing medium feeding period required for feeding the printing

medium for the predetermined amount after completion of printing in a preceding line in a preceding scan;

step of setting a carriage scanning period required to printing start of the next line after completion of printing in said preceding line in a preceding scan so as to become equal to said printing medium feeding period depending upon printing completion position of the preceding line and the printing start position of the next line; and

step of driving said carriage to scan depending upon a period set by said carriage scanning period setting step.

23. A carriage scan driving method as claimed in claim 22, wherein

said carriage scanning period includes at least a first carriage scanning period required for the carriage to stop at a predetermined position after completion of printing in a predetermined direction, a recovery process period required for performing recovery process of the printing head at the predetermined position and a second carriage scanning period required for the carriage to reach the printing start position of the next line by scanning the carriage in a direction opposite to scanning of said predetermined direction from said predetermined position after finishing of the recovery process,

said carriage scanning period setting step takes said printing medium a difference between a sum of said first

carriage scanning period, a recovery period and said second carriage scanning period, and said printing medium feeding period as a waiting period when a sum of said first carriage scanning period, said recovery period and said second carriage scanning period is less than said printing medium feeding period,

said carriage driving step stops the carriage for said waiting period after said recovery process.

24. A carriage scan driving method as claimed in claim 22, wherein

said carriage scanning period includes at least a first carriage scanning period required for the carriage to stop at a predetermined position after completion of printing in a predetermined direction, a recovery process period required for performing recovery process of the printing head at the predetermined position and a second carriage scanning period required for the carriage to reach the printing start position of the next line by scanning the carriage in a direction opposite to scanning of said predetermined direction from said predetermined position after finishing of the recovery process,

said carriage scanning period setting step takes a difference between a sum of said first carriage scanning period, a recovery period and said second carriage scanning period, and said printing medium feeding period as a waiting period when a sum of said first carriage

scanning period, said recovery period and said second carriage scanning period is less than said printing medium feeding period,

said carriage driving step performs said recovery process after stopping the carriage for said waiting period.

25. A printing method performing printing on a printing medium with relative primary scan of a carriage mounting a printing head and a printing medium for a plurality of times, and with relative auxiliary scan of said printing medium and said carriage in a direction different from the direction of said primary scan, during intervals between said plurality of times of primary scan, the method comprising:

printing step of performing printing in a leading primary scan;

step of performing said auxiliary scan after completion of said printing step and before initiation of printing step in a following primary scan;

wherein

a period required for said primary scan from a printing completion position of a printing step in a said leading primary scan to a printing start position of a printing step in a next primary scan is substantially equal to a period required for said auxiliary scan.